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EXAMINER
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BRUCKART, BENJAMIN R

ART UNIT	PAPER NUMBER
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2146

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/710,646	<b>Applicant(s)</b> FAKHOURI ET AL.	
	<b>Examiner</b> BENJAMIN R. BRUCKART	<b>Art Unit</b> 2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 28-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-26 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **Detailed Action**

Claims 21-27 are pending in this Office Action.

Claims 28-31 are withdrawn by election/restriction.

Claims 21-27 are amended.

Applicant elects group I (claims 21-27) without traverse.

### **Response to Arguments**

Applicant's arguments filed in the amendment filed 2/11/08, are not persuasive. The reasons are set forth below.

### **Applicant's invention as claimed:**

### **Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

. Claim 25 is rejected under 35 U.S.C. 101 as being directed to systems which in light of the specification are interpreted to be software. Page 7 of the specification defines clusters to include hardware and software components and page 61 of the specification hardware and software subsystems are built on top of each other.

Claims 21-24, 27 are method claims drawn to the statutory category of a process.

Claim 26 would be drawn to the statutory category of a machine performing the method as claimed but there is a 112 issue with that claim. See 112 rejection below.

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The claims read “a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform...” The specification does not specifically define a program storage device tangibly embodying a program of instructions or the hardware in which the machine runs.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims read “a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform...” The specification does not specifically define a program storage device tangibly embodying a program of instructions or the hardware in which the machine runs.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2152

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 26 is rejected under 35 U.S.C. 112, second paragraph as having lack of antecedent basis. The claims read “a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform...” The specification does not specifically define a program storage device tangibly embodying a program of instructions or the hardware in which the machine runs.

The 35 U.S.C. 112, second paragraph rejection is withdrawn from claims 21, 25, 26 reciting in a ‘systematic manner.’ Applicant’s arguments have narrowed the definition of this word to mean ‘involving a system.’ Therefore other definitions or interpretations of systematic are to be discarded.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 21-24, 25 and 26 are rejected under 102(e) as being anticipated by U.S. Patent No. 6,178,529 by Short et al.**

Regarding claim 21, a method of managing a cluster of networked resources and resource groups using rule-based constraints in a scalable clustering environment (Short: col. 5, lines 46- col. 6, line 9; resources have dependencies and are managed), the method comprising the steps of:

building a globally optimal cluster configuration of said networked resources in accordance with said rule-based constraints and a current state of resources (Short: col. 5, lines 46- col. 6, line 9; col. 7, lines 38-54 teaches building and assigning resources to groups), including identifying for, each of the resources and resource groups an availability and quality of service, which are determined by the dependencies among the resources and resource groups, resource equivalency, user preferences, constraints on the resources, and network policies (Short: col. 6, lines 28-45 teaches availability... online, offline, paused. Col. 8, lines 42-50 teaches quality associated with the service as failed or online [available]),

bringing said cluster of networked resources on-line in a systematic manner (Short: col. 5, lines 46-53; startup/initialization; col. 6, lines 46-65), giving the current state of each of the resources and resource groups, and their said dependences, user preferences, constraints on the resources, and network policies, (Short: col. 5, lines 23-53),

with said cluster of networked resources on-line determining dynamic dependencies of and configuration information about said cluster of networked resources (i) statically at said step of building and step of bringing said cluster of networked services online (Short: col. 5, lines 46- col. 6, line 9; startup) and (ii) dynamically during cluster operation in accordance with said rule-based constraints (Short: col. 7, lines 13-53),

supporting startup, operation and shutdown of said cluster of networked resources according to current policies, and system events, and said rule-based constraints (Short: col. 5, lines 46-53; startup/restart/failover),

separating said dependencies among resources and resource groups, user preferences, constraints among the resources, system events, and current policies into (i) a first, static rules based group (Short: col. 7, lines 64- col. 8, line 6; “associated listed of resources it may execute”) and (ii) a second dynamically changing events based group (Short: col. 7, lines 13-53), wherein said first group captures the static resources including for each resource, a type and quality of the supporting resources needed to enable said each resource (Short: col. 7, lines 64- col. 8, line 6) wherein the step of separating is implemented according to said rule-based constraints and

combining said first and second groups in a systematic manner only when needed to build the said globally optimal cluster configuration (Short: col. 5, lines 22-26), and only when needed

during operation to modify and realign the current state of said cluster to said globally optimal cluster configuration or an alternative globally optimal in view of said current policies, said system events and said rule-based constraints (Short: col. 5, lines 22-36).

*Claims 25 and 26 are rejected under the same grounds of above as being substantially similar.*

Regarding claim 22, a method according to Claim 21, wherein said step of combining further comprising:

continuously monitoring system events and comparing the current cluster state with the globally optimal cluster configuration, and upon detecting a discrepancy between said current cluster state and said globally optimal cluster configuration states, realigning said cluster of networked resources, including issuing commands to the networked resources comprising the current cluster state bring about the realigning (Short: col. 5, lines 23-45);

providing a group of cluster resources, including:

i) a persistent cluster registry to store and retrieve the configuration of the cluster of the networked resources (Short: col. 5, lines 23-45; database manager),

ii) topology resources for detecting node and communication adapter failures within said cluster of networked resources (Short: col. 5, line 66- col. 6, line 10; resource monitor),

iii) messaging for selected communications between a central resource and all other resources comprising the cluster of networked resources (Short: col. 4, lines 55- col. 5, line 10), and

iv) a group resources facility for electing one of the resources as the central resource at cluster initialization, and upon determining that an existing central resource is unable to provide the resources thereof (Short: col. 4, lines 32-53; col. 6, line 66- col. 7, line 12),

delivering notification of system events to a coordinator to process said system events in accordance with said rule-based constraints to arrive at a response to said system events (Short: col. 6, lines 10-20; col. 5, lines 46-65; the coordinator=resource manager);

translating the response into commands to the resources that realign the availability, quality of service and related dependencies to execute said commands by a resource manager associated with each of said resources, including issuance of the commands in a partial order sequence where necessary, in view of said each resource's dependencies (Short: col. 5, lines 46-65); and

not sending out a “next” command until the leader resource is aware of a positive outcome of the current command or commands that the execution of said next command depends on (Short: col. 5, lines 11-22; col. 7, lines 38-53; membership verification).

Regarding claim 23, a method according to Claim 22, wherein:

said coordinator, by said rule-based constraints, ensures that the current cluster state is realigned with said globally optimal cluster configuration, or an alternative globally optimal cluster configuration to system events in said cluster, wherein (Short: col. 4, lines 32-54; col. 5, lines 52-57);

all events and command feedback from said cluster in response to a current or next command is directed to said coordination (Short: col. 1, lines 31-40).

Regarding claim 24, a method according to Claim 21, further comprising:

providing an optimizer module for computing said globally optimal cluster configuration or an alternative globally optimal cluster configuration based on said rule-based constraints and to realign the current state of said cluster when needed in response to system events (Short: col. 5, lines 23-65);

using the optimizer module for realigning the current configuration state in accordance with said rule-based constraints whenever an objective value calculated in view of the current configuration state is below a certain value calculated for the globally optimal cluster configuration, including feeding back to the optimizer module an artificially generated event that forces the optimizer to realign the current network configuration to a cluster configuration approaching or equivalent to said globally optimal cluster configuration and said alternative global cluster configuration (Short: col. 6, lines 28-45; col. 7, lines 55- col. 8, line 11);



providing the optimizer module with a snapshot of a current state of the cluster of networked resources (Short: col. 5, lines 23-45);

wherein the optimizer, given said snapshot, calculated and proposes an approximately globally optimal cluster configuration that takes into account said current state of the cluster and long-term objectives defined for the cluster in accordance with said rule-based constraints (Short: col. 5, lines 23- col. 6, line 10; desired configuration).

### *Allowable Subject Matter*

Claim 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The claims teach among other things ‘using a preprocessor module with an associated entry queue, an optimizer module, and a postprocessor module to reallocate and invoke results when scheduled and executed on the optimizer’ to create the globally optimal cluster configuration when combined with separating dependencies among resources and groups into a first static rules based group separating said dependencies among resources and resource groups, user preferences, constraints among the resources, system events, and current policies into (i) a first, static rules based group and (ii) a second dynamically changing events based group, wherein said first group captures the static resources including for each resource, a type and quality of the supporting resources needed to enable said each resource wherein the step of separating is implemented according to said rule-based constraints.

### **Remarks**

The claims have made a lot of progress with the latest amendments. The claims read a lot more clear fixing most of the 112 issues cited previously. The examiner has objected to claim 27 and believes the claims would be in condition for allowance if the 101 issues are fixed as well as the novel subject matter is included in independent form.

### **The Applicant Argues:**

The Short reference does not teach "that the resources may be interchanged with resources, or resource group equivalencies."

**In response**, the examiner respectfully submits:

The Short anticipates the claimed invention. Short teaches the two groups. The first group being the static rule-constraints group which is based upon device types, dependencies (Short: col. 5, lines 46- col. 6, line 9; col. 6, lines 46-65). The second dynamically changing group is the status and based on operations group where resources go offline, paused or available. When merging these two constraints you build the globally optimal configuration. The applicant mentions interchanging but claims separating and combining. Perhaps more detail distinguishing the differences. The examiner believes an interview would be beneficial for processing of the case.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R. Bruckart whose telephone number is (571) 272-3982. The examiner can normally be reached on 9:00-5:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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